UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB1998-1035

June 29, 1998

W.B. Paynter
U.S. Army Corps of Engineers
ATTN: William R. Davis
Portland District, CENWP-CO-GP
P.O. Box 2946
Portland, Oregon 97208-2946

Re: Consultation on Bear Creek Dam Modification Project (Extension of Corps #92-231), Jackson County, Oregon

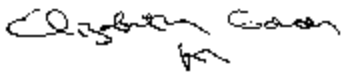
Dear Mr. Paynter:

Enclosed is a biological opinion regarding the potential effects of the Bear Creek Dam Modification Project on Southern Oregon/Northern California coho salmon (SONC coho), Southern Oregon/Coastal California chinook salmon (SOCC chinook), and Klamath Mountains Province steelhead (KMP steelhead) resulting from issuance and extension of a Section 404(b)(1) permit (Corps #92-231). The permit applicant is the Medford Urban Renewal Agency, which proposes to remove most of Bear Creek Dam to restore fish passage, stream habitat, and the Bear Creek Greenway during the summer of 1998.

SONC coho were listed as threatened under the Endangered Species Act (ESA) by the National Marine Fisheries Service (NMFS) (May 6, 1997, 62 FR 42588). Critical habitat for SONC coho was proposed by the NMFS on November 25, 1997 (62 FR 62741). Southern Oregon/Coastal California (SOCC) chinook salmon were proposed for listing under the ESA on March 9, 1998 (63 FR 11482), with a final listing decision in March 1999; critical habitat for SOCC chinook was proposed at the same time as the proposed listing. Klamath Mountains Province steelhead (KMP steelhead, *O. mykiss*) were classified as a candidate under the ESA by NMFS on March 19, 1998 (63 FR 13347). SONC coho, SOCC chinook salmon, and KMP steelhead all occur in Bear Creek. Although the current distribution of SONC coho appears to be limited to the lower reach of this stream, existing habitat in the upper reaches of the watershed and restoration projects such as this one may provide for their re-establishment. This consultation is undertaken under section 7(a)(2) of the ESA, and its implementing regulations, 50 CFR Part 402.

Enclosed is the biological opinion on your issuance and extension of the 404(b)(1) permit to the Medford Urban Renewal Agency, authorizing the incidental take of SONC coho, SOCC chinook salmon, or KMP steelhead that may be caused by the Bear Creek Dam Modification Project. If you have any questions regarding this opinion, please contact Lance Smith of my staff at(503) 231-2307.

Sincerely,



William Stelle, Jr.
Regional Administrator

cc: Marsha Danielson, Medford Urban Renewel Agency, Medford
Jim Pendleton, Rogue River Valley Irrigation District, Medford
Marc Prevost, Rogue Valley Council of Governments, Central Point
Mike Evenson, Oregon Department of Fish and Wildlife,Central Point
Steve Wille, U.S. Fish and Wildlife Service, Portland

Endangered Species Act - Section 7
Consultation

BIOLOGICAL OPINION

Effects of Bear Creek Dam Modification Project
on Southern Oregon/Northern California Coho,
Southern Oregon/California Coastal Chinook,
and Klamath Mountains Province Steelhead

Agency: U.S. Army Corps of Engineers

Consultation
Conducted By: National Marine Fisheries Service
Northwest Region

Date Issued: June 29, 1998

Refer to: OSB1998-1035

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I. Background

Southern Oregon/Northern California coho salmon (SONC coho, *Oncorhynchus kisutch*) were listed as threatened under the Endangered Species Act (ESA) by the National Marine Fisheries Service (NMFS) on May 6, 1997 (62 FR 24588). SONC coho occur between Cape Blanco, Oregon, and Punta Gorda, California. Critical habitat for SONC coho was proposed by NMFS on November 25, 1997 (62 FR 62741). Southern Oregon and California Coastal chinook salmon (SOCC chinook, *O. tshawytscha*) were proposed for listing as threatened under the ESA by NMFS on March 9, 1998 (63 FR 11481). SOCC chinook occur between Cape Blanco, Oregon, and Point Bonita, California. Klamath Mountains Province steelhead (KMP steelhead, *O. mykiss*) were classified as a candidate under the ESA by NMFS on March 19, 1998 (63 FR 13347). KMP steelhead occur between Cape Blanco, Oregon, and the Klamath River Basin (inclusive) in California.

The Corps of Engineers (Corps) provided a three year authorization (#92-231) on February 8, 1993, for the Medford Urban Renewal Agency (MURA) to modify Bear Creek Dam in Medford, Oregon and replace it with a new diversion. On October 3, 1997, NMFS received a letter from the Corps dated October 1, 1997, regarding an extension of this permit, complete with plans for the project. The Corps and MURA had previously provided NMFS with detailed plans of all aspects of this project. The October 1, 1997, letter and information provided previously constitute a Biological Assessment (BA) describing the effects of the Bear Creek Dam Modification Project (Bear Creek Dam Project) and future operation of the new diversion on the above species.

The objective of the Bear Creek Dam Project is to restore currently impounded stream and riparian habitat in Bear Creek, and improve fish passage at the Bear Creek Dam within the city of Medford while still providing Rogue River Valley Irrigation District (RRVID) with the irrigation water it currently obtains from April to October each year via the existing Bear Creek Dam. NMFS and the Corps have agreed that even though this project will result in substantial long-term benefits to all anadromous salmonids in the project area, it is "likely to adversely affect" SONC coho, SOCC chinook, and KMP steelhead due to the in-water work necessary for its implementation as well as the future operation of the new diversion.

The objective of this biological opinion is to determine whether the implementation of the Bear Creek Dam Project and future operation of the new diversion is likely to jeopardize: (1) SONC coho, listed as threatened under the ESA; (2) SOCC chinook, proposed as threatened under the ESA; or (3) KMP steelhead, a candidate under the ESA. Although NMFS expects some impacts to individual fish and the environmental baseline from these actions, these impacts are expected to be insignificant because of project design, project timing, and compliance of fish passage at the new diversion with NMFS' criteria. The project is expected to provide significant long-term benefits for all three species, as well as restoration of proposed SONC coho critical habitat.

II. Proposed Action

The "proposed action" is the permitting under Section 404 of the Clean Water Act of the Bear Creek Dam Project by the Corps. The Bear Creek Dam Project consists of: (1) lowering the existing concrete portion of Bear Creek Dam by five feet (eight feet including timber stoplogs inserted on top of the dam crest during irrigation season) and modifying the remaining three feet of the dam to restore fish passage; (2) removing the five-foot deep wedge of silt from behind the existing dam to restore the stream channel; (3) constructing and operating a three-foot high summertime diversion out of inflatable rubber approximately 1,000 feet above the current dam to provide irrigation water, and installing and operating new rotary fish screens; and (4) building a pipeline from the new diversion to the existing irrigation canal system. The new diversion and fish screens were installed and tested in 1997. The operation of the new diversion and fish screens by RRVID is included in the proposed action because it is an interrelated and interdependent action. All in-stream work will be done in 1998 during work windows stipulated by the Oregon Department of Fish and Wildlife (June 15 - September 15 for upper Rogue River tributaries) designed to minimize effects on anadromous salmonids.

III. Biological Information and Critical Habitat

The listing status and biological information for SONC coho, SOCC chinook, and KMP steelhead are described in Attachment 1. Although critical habitat has not been proposed or designated, the attachment describes potential critical habitat elements for these species.

IV. Evaluating Proposed Actions

The standards for determining jeopardy are set forth in Section 7(a)(2) of the ESA, as defined by the consultation regulations (50 CFR Part 402). Attachment 2 describes how NMFS applies the ESA jeopardy and destruction/adverse modification of critical habitat standards. Critical habitat has not been proposed or designated for any of the listed/proposed species covered by this opinion.

As described in Attachment 2, the first steps in applying the ESA jeopardy standards are to define the biological requirements of the species and to describe the current status as reflected by the environmental baseline. In the next steps, NMFS' jeopardy analysis considers how proposed actions are expected to directly and indirectly affect specific environmental factors that define properly functioning aquatic habitat essential for the survival and recovery of the species. This analysis is set within the dual context of the species' biological requirements and the existing conditions under the environmental baseline (defined in Attachment 1). The analysis takes into consideration an overall picture of the beneficial and detrimental activities taking place within the action area. If the cumulative actions are found to jeopardize the listed species then NMFS must identify any reasonable and prudent alternatives to the proposed action.

A. Biological Requirements

For this consultation, NMFS finds that the biological requirements of the listed/proposed species are best expressed in terms of environmental factors that define properly functioning freshwater aquatic habitat necessary for survival and recovery of the species. Individual environmental factors include water quality, habitat access, physical habitat elements, channel condition, and hydrology. Properly functioning watersheds, where all of the individual factors operate together to provide healthy aquatic ecosystems, are also necessary for the survival and recovery of the listed/proposed species. This information is summarized in Attachment 1.

B. Environmental Baseline

Current range-wide status of species under environmental baseline. NMFS described the current population status of the SONC coho in its status review (Weitcamp et al., 1995) and in the final rule (May 6, 1997, 62 FR 24588). NMFS also described the current population status of SOCC chinook in its status review (Meyers et al. 1998). The range-wide status of KMP steelhead was determined as a result of an expanded Illinois River steelhead status review (Busby et al. 1994). The recent range-wide status of these species is summarized in Attachment 1. In the absence of adequate population data, habitat condition provides a means of evaluating the status of these species for the environmental baseline assessment.

Action Area. The "action area" is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR 402.02). The action area for this consultation is the reach of Bear Creek from the site of the new diversion to the mouth.

Current status of proposed/listed species under environmental baseline within the action area. Based on the best information available on the current status of SONC coho, SOCC chinook, and KMP steelhead (Attachment 1), NMFS' assumptions given the information available regarding population status, population trends, and genetics (see Attachment 2), and the relatively poor environmental baseline conditions within the action area (see Table 1 below, SONC coho final listing rule, and KMP steelhead proposed listing rule), NMFS concludes that not all of the biological requirements of the proposed and listed species within the action area are currently being met under the environmental baseline. Actions that do not retard attainment of properly functioning aquatic conditions when added to the environmental baseline would not jeopardize the continued existence of anadromous salmonids.

V. Analysis of Effects

A. Effects of Proposed Actions. The effects determinations in this opinion were made using a method for evaluating current aquatic conditions (the environmental baseline) and predicting effects of actions on them. This process is described in the document "Making ESA Determinations of Effect for

Individual or Grouped Actions at the Watershed Scale" (NMFS 1996). This assessment method was designed for the purpose of providing adequate information in a tabular form for NMFS to determine the effects of actions subject to consultation. The effects of actions are expressed in terms of the expected effect (restore, maintain, or degrade) on each of approximately 17 aquatic habitat factors in the project area, as described in the "checklist for documenting environmental baseline and effects of the action" (checklist) completed for each action.

The results of the completed checklist for the proposed action provides a basis for determining the overall effects on the environmental baseline in the action area. The action covered in this opinion was shown to restore many of the environmental factors over the long-term (more than one year) that could potentially be affected by the proposed project (see Table 1 below). Sediment inputs to Bear Creek are likely to be increased over the short-term (three months or less) by the project due to inwater work. Implementation of the proposed measures to reduce sediment inputs, such as restricted in-water work windows and the use of coffer dams around in-water work areas (see BA for details), will minimize sediment effects and maintain the existing environmental baseline for sediment over the long-term. Nevertheless, short-lived adverse effects such as temporary increases in sediment have the potential to result in incidental take.

In addition to sediment impacts, the proposed project may result in direct incidental take of SONC coho, SOCC chinook, and/or KMP steelhead if fish are present in the immediate work areas when work is being carried out. The proposed project will require the operation of heavy equipment within Bear Creek, which could harm, harass, or otherwise incidentally take SONC coho, SOCC chinook, or KMP steelhead in the area at that time. These direct effects will be minimized by the proposed project guidelines, such as limiting in-water work to Oregon Department of Fish and Wildlife's work windows. Long-term adverse effects and direct incidental take of SONC coho, SOCC chinook, and/or KMP steelhead may occur due to the operation of the new diversion and fish screens, but will be minimized because the new juvenile screens (already installed and tested) meet NMFS' criteria (Attachment 3) and all other new fish passage facilities (new diversion and fish ladder already installed and tested) at the project are approved by NMFS.

Table 1. Summary checklist of environmental baseline and effects of the Bear Creek Dam Project on relevant indicators in the action area (short-term refers to three months or less).

	ENVIRONMENTAL BASELINE			EFFECTS OF THE ACTION(S)		
PATHWAYS:						
INDICATORS	Properly Functioning	At Risk	Not Propr.[1] Functioning	Restore[1]	Maintain[1]	Degrade[1]
Water Quality:						
Temperature		X		X		
Sediment		X			X long-term	X short-term
Chem. Contamination		X			X	
Habitat Access:						
Physical Barriers			X	X		
Habitat Elements:						
Substrate		X		X		
Large Woody Debris		X		X		
Pool Frequency		X		X		
Pool Quality		X		X		
Off-channel Habitat		X		X		
Refugia		X		X		
Channel Condition:						
Width/Depth Ratio		X		X		
Streambank Cond.		X		X		
Floodplain Connectivity		X			X	
Flow/Hydrology:						
Peak/Base Flows		X			X	
Drainage Network Increase		X			X	
Watershed Conditions:						
Road Dens. & Loc.			X		X	
Disturbance History			X		X	
Riparian Reserves		X		X		

[1] These three categories of function ("properly functioning", "at risk", and "not properly functioning") and the three effects ("restore", "maintain", and "degrade") are defined for each indicator in NMFS (1996).

B. Effects of Interrelated and Interdependent Actions. Interrelated and interdependent actions are those that would not occur but for the proposed action. Because of the implementation of the Bear Creek Dam Project, the new diversion and fish screens will be operated about 1,000 feet upstream of the existing dam so that RRVID will continue to be provided with water from April through October. The operation of these new facilities would not occur but for the Bear Creek Dam Project, thus it is an interrelated and interdependent action. Although the new diversion has a NMFS-approved ladder, and the new screens meet NMFS juvenile fish screening criteria, it is still likely that the operation of these facilities will result in a minimum amount of incidental take of SONC coho, SOCC chinook, and/or KMP steelhead adults and/or juveniles. Incidental take could occur due to delay of adults who have difficulty finding the ladder, impingement of juvenile fish due to partial clogging of the new screens by debris resulting in approach velocities increasing over the screen area that remains open, or mechanical problems resulting in faulty operation of the new diversion of screens.

C. Cumulative Effects. "Cumulative effects" are defined in 50 CFR 402.02 as those effects of "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The "action area" for this consultation is the reach of Bear Creek from the new diversion to the mouth.

A substantial portion of spawning and rearing habitat for SONC coho, SOCC chinook, and KMP steelhead occurs within the action area. Historically, agriculture, livestock grazing, forestry, urban development, and other activities have contributed substantially to temperature and sediment problems in the Bear Creek watershed. Significant improvement in SONC coho, SOCC chinook, and KMP steelhead reproductive success is unlikely in the Bear Creek watershed without changes in agricultural, forestry, and other practices.

NMFS is not aware of any future new, or changes to existing, State and private activities within the action area that would cause greater impacts to listed or proposed species than presently occurs. In fact, now that SONC coho are listed, SOCC chinook are proposed for listing, and KMP steelhead are candidates, NMFS assumes that landowners will take steps to curtail or avoid land management practices that would result take. For actions on non-Federal lands which the landowner or administering non-Federal agency believes are likely to result in adverse effects to SONC coho or its habitat, the landowner or agency should work with NMFS to obtain the appropriate section 7 or section 10 incidental take permit, which requires submission of a habitat conservation plan. If a take permit is requested, NMFS would likely seek project modifications to avoid or minimize adverse effects and taking of listed fish. Until improvements in non-Federal land management practices are actually implemented, NMFS assumes that future private and State actions will continue at similar intensities as in recent years.

VI. Conclusion

The Bear Creek Dam Project permitted by the Corps, and the operation of the new diversion and fish screens considered in this Biological Opinion, as described in the BA, is not likely to jeopardize the continued existence of SONC coho, SOCC chinook, or KMP steelhead. NMFS used the best available scientific and commercial data to apply its jeopardy analysis (described in Attachment 2), when analyzing the effects of the proposed actions on the biological requirements of the species relative to the environmental baseline (described in Attachment 1) , together with cumulative effects. NMFS applied its evaluation methodology (NMFS 1996) to the proposed action and found that it would cause minor, short-term adverse degradation of some environmental baseline indicators. However, the proposed action will result in the restoration of fish passage and stream habitat at the Bear Creek Dam site, and this action is expected to contribute to the restoration of fully functioning aquatic habitat in the action area over the long term. Thus, the effects of the proposed action would not reduce prespawning survival or egg-to-smolt survival, and is expected to improve upstream/downstream migration survival rates.

VII. Reinitiation of Consultation

Consultation must be reinitiated if: the amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded; new information reveals effects of the action may affect the listed species in a way not previously considered; the action is modified in a way that causes an effect on the listed species that was not previously considered; or, a new species is listed or critical habitat is designated that may be affected by the action (50 C.F.R. 402.16).

Based on the information in the BA, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Biological Opinion. To ensure protection for a species assigned an unquantifiable level of take, reinitiation of consultation is required: (1) if any action is modified in a way that causes an effect on the listed species that was not previously considered in the BA and this Biological Opinion; (2) new information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered; or (3) a new species is listed or critical habitat is designated that may be affected by the action (50 C.F.R. 402.16).

VIII. References

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this opinion in addition to the BA.

Busby, P.J, T.C. Wainwright, and R.S. Waples. 1994. Status review for Klamath Mountains Province steelhead. U.S. Dept. Commerce, NOAA Tech. Memo. NMFS-NWFSC-19, 130 p.

Meyers, J.M. and ten others. 1998. Status review of chinook salmon from Washington, Idaho, Oregon, and California. U.S. Dept. Commerce, NOAA Tech. Memo. NMFS-NWFSC-35, 443 p.

NMFS (National Marine Fisheries Service) 1996. Making Endangered Species Act determinations of effect for individual and grouped actions at the watershed scale. Habitat Conservation Program, Portland, Oregon.

Weitcamp, L.A., T.C. Wainwright, G.J. Bryant, G.B. Milner, D.J. Teel, R.G. Kope, and R.S. Waples. 1995. Status review of coho salmon from Washington, Oregon, and California. U.S. Dept. Commerce, NOAA Tech Memo. NMFS-NWFSC-24, 258 p.

IX. Incidental Take Statement

Sections 4 (d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. If necessary, it also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

A. Amount or Extent of the Take

Although NMFS views the Bear Creek Dam Project as a bonafide restoration project, NMFS anticipates that the actions covered by this Biological Opinion (implementation of the Bear Creek Dam Project, and operation of the new diversion and fish screens) have more than a negligible likelihood of resulting in incidental take of SONC coho, SOCC chinook, and KMP steelhead because of sediment effects, in-water work, and the operation of new fish passage facilities. Effects of management actions such as these are largely unquantifiable in the short term, and are not expected to be measurable as long-term effects on the species' habitat or population levels. Therefore, even though NMFS expects some low level incidental take to occur due to the actions covered by this Biological Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species itself. In instances such as these, the NMFS designates the expected level of take as "unquantifiable." Based on the information in the BA, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Biological Opinion.

The current design and operation of the new fish passage facilities (screens and ladder) are approved by NMFS. However, incidental take of SONC coho, SOCC chinook, and KMP steelhead caused the by the operation of the new fish passage facilities (screens and ladder) is only authorized by this opinion under the condition that they continue to be operated in a manner approved by NMFS. If the design or operation of the fish passage facilities changes in a manner not approved by NMFS, this incidental take permit will no longer apply.

B. Reasonable and Prudent Measures

NMFS believes that the incidental take of SONC coho, SOCC chinook, and KMP steelhead that is likely to occur as a result of the actions included in this Biological Opinion have been minimized by project design. Thus the following reasonable and prudent measure simply requires that the project design be implemented as proposed:

1. The Corps shall implement proposed project design features.

C. Terms and Conditions

1. Ensure that the proposed project design features are complied with through implementation of all "General Conditions" in the February 8, 1993, permit issued by the Corps for the proposed project, including the "Special Certification Conditions" in the January 15, 1993, letter from the Oregon Department of Environmental Quality.